

REMARKS

The present Amendment is in response to the Examiner's Office Action mailed May 17, 2006. Claims 1, 6, and 12 are amended and new claim 19 is added. Claims 1-19 are now pending in view of the above amendments.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

I. Rejection Under 35 U.S.C. § 103

The Examiner rejects claims 6-12, 14, and 15 under 35 U.S.C. § 103 as being unpatentable over *Benzoni et al.* (U.S. Patent No. 5,337,398) in view of *qLogic* ("SANblade: 2-Gbps Fibre Channel to PCI Express Host Bus Adapter"). The Examiner rejects claim 13 under 35 U.S.C. § 103 as being unpatentable over *Benzoni* in view of *qLogic*, further in view of *Dwarkin et al.* (U.S. Patent No. 6,454,470). The Examiner rejects claim 16 under 35 U.S.C. § 103 as being unpatentable over *Benzoni* in view of *qLogic*, further in view of *Giboney et al.* (U.S. Patent No. 6,318,909). The Examiner rejects claims 17 and 18 under 35 U.S.C. § 103 as being unpatentable over *Benzoni* in view of *qLogic*, further in view of *Jiang et al.* (U.S. Patent No. 6,632,030). The Examiner rejects claims 1-3 and 5 under 35 U.S.C. § 103 as being unpatentable over *Benzoni* in view of *Jiang*. The Examiner rejects claim 4 under 35 U.S.C. § 103 as being unpatentable over *Benzoni* in view of *Jiang*, further in view of *qLogic*. Because *Benzoni* teaches away from the proposed combinations and modifications suggested in the Office Action, the Applicant respectfully requests that the rejections of the claims be withdrawn as discussed in further detail hereinafter. Col. 7, lines 16-27.

According to the applicable statute, a claimed invention is unpatentable for obviousness if the differences between it and the prior art “are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103(a) (2005); *Graham v. John Deere Co.*, 383 U.S. 1, 14 (1966); MPEP 2142. Obviousness is a legal question based on underlying factual determinations including: (1) the scope and content of the prior art, including what that prior art teaches explicitly and inherently; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. *Graham*, 383 U.S. at 17-18; *In re Dembiczak*, 175 F.3d 994, 998 (Fed. Cir. 1999). It is the initial burden of the PTO to demonstrate a *prima facie* case of obviousness.

According to MPEP section 2143:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

(Emphasis added).

Benzoni teaches a single in-line optical package that uses silicon technology and overmolding techniques to provide completely passive alignment between the various optical components. Abstract. As shown in Figure 1, an optical receiving device 28 and an optical transmitting device 26 are mounted directly to a common substrate 12 along with corresponding control circuits 18 and 20. Figure 4 of *Benzoni* illustrates the optical devices 26 and 28 coupled directly to the common substrate 12 and surrounded by alignment fiducials 30 and 32. Figures 5 and 7 illustrate a lens holder 34 including spherical members 38 used to provide physical contact to, and mating with the fiducials 30 and 32 of the silicon substrate 12 upon which the optical devices 26 and 28 are mounted. Col. 6, lines 4-7. Figures 8 and 10 illustrate how the single in-line optical package is assembled such that it is subsequently overmolded by an overmolded outer package 60 shown in Figure 12 thus creating the single in-line optical package.

In direct contrast to the teachings of *Benzoni*, claim 1 includes the element, “each of the at least one optical subassembly...being disposed upon the substrate, each of the at least one optical subassembly being both electrically and mechanically coupled to the substrate by the plurality of electrical connections of the at least one optical subassembly....” Claim 6 includes the element, “wherein the transmit optical subassembly and receive optical subassembly are mounted upon the transceiver substrate by electrical connections, the electrical connections securing the transmit optical subassembly and receive optical subassembly to the substrate....” Finally, claim 12 recites the element, “the transceiver substrate being physically and electrically connected to the transmit optical subassembly and the receive optical subassembly by respective electrical connections of the transmit optical subassembly and the receive optical subassembly....”

Benzoni includes express teachings against at least those elements of claims 1, 6, and 12 discussed above. For example, Figure 12 of *Benzoni* clearly illustrates that optical devices 26 and 28 are attached to the substrate 12. Moreover, the ferrule receptacles 50 and 52 are mechanically connected to the substrate 12 by an overmolded portion 60. *Benzoni* also includes express teachings as to the undesirability of separately assembled optical subassemblies mounted on a printed circuit board. *See* col. 1, lines 19-27; col. 1, lines 39-59. For example, *Benzoni* discusses “major disadvantage[s]” related to space considerations (col. 1, lines 39-44), long leads introducing noise (col. 1, lines 44-52), and manufacturing problems increasing cost related to such designs (col. 1 line 67 – col. 2. line 2). *Benzoni* clearly explains that his teachings are intended to overcome these problems by creating a single in-line package where the optical devices are located directly on the same silicon substrate where only one solder reflow process is implemented. (col. 2, lines 56-62). Thus, according to the teachings of *Benzoni*, mechanical and electrical connection of an optical subassembly using electrical connections of the optical subassembly has major disadvantages and is in direct contrast to the teachings therein. As such, *Benzoni* teaches away from elements illustrated in claims 1, 6, and 12.

It is well established that “[a] *prima facie* case of obviousness can be rebutted if the Applicant ... can show that the art in any material respect taught away from the claimed invention.” *In re Geisler*, 116 F.3d 1465, 1469 (Fed. Cir. 1997). “A reference may be said to teach away when a person of ordinary skill, upon reading the reference, ... would be led in a direction divergent from the path that was taken by the Applicant.” *Tec Air, Inc. v. Denso Mfg.*

Mich. Inc., 192 F.3d 1353, 1360 (Fed. Cir. 1999). Accordingly, in instances as here, where a proposed modification of a reference (i.e. *Benzoni*) would be in direct contrast to the teachings of that reference, a *prima facie* case of obvious cannot lie. As such, the Applicants respectfully request that the rejection of claims 1, 6, and 12 be withdrawn.

The Applicant also notes that on page 9 the Examiner appears to be relying on personal knowledge where the Examiner alleges that use of an electrical pin as suggested by *Jiang* would be an engineering design choice to connect the subassembly to the substrate. The Applicant notes that there must be some expectation of success and motivation for the proposed modification of *Benzoni*. Here, *Benzoni* teaches away from use of pins, leads, and separate OSA construction as discussed above. Further, the Examiner has not explained how one of ordinary skill would implement pins in *Benzoni* where the optical devices are attached to the same substrate. Moreover, *Benzoni* includes express teachings of alignment fiducials 30 and corresponding spherical members 38, which would likely interfere with the use of electrical pins.

If, however, the Examiner is relying on the personal knowledge of the Examiner to reject any of the claims, pursuant to 37 C.F.R. 1.104(d)(2), Applicant hereby respectfully requests an Examiner affidavit that: (i) specifically identifies any and all references(s), other than those that have been specifically cited by the Examiner, upon which the obviousness rejection the claims is based; and (ii) provides complete details concerning the reasoning and analysis of the Examiner concerning those references as those references are purported to apply to the rejection of the claims.

Claims 2-5 depend from claim 1, claims 7-11 depend from claim 6, and claims 13-18 depend from claim 12. If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). As such, the Applicants respectfully request that the rejection of claims 2-5, 7-11, and 13-18 be withdrawn at least for the same reasons as claims 1, 6, and 12.

II New Claim

Claim 19 has been added and depends from claim 6. As such, the Applicants believe that claim 19 is allowable at least for the same reasons as claim 6.

CONCLUSION

In view of the foregoing, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 17th day of October, 2006.

Respectfully submitted,

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